

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-148451

(43)Date of publication of application : 13.06.1995

(51)Int.Cl.

B05B 15/04

(21)Application number : 05-299223

(71)Applicant : TAIKISHA LTD

(22)Date of filing : 30.11.1993

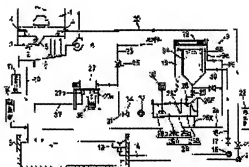
(72)Inventor : WATANABE MAKOTO

(54) COATING MIST REMOVING DEVICE OF COATING EQUIPMENT

(57)Abstract:

PURPOSE: To extremely reduce the water content of the coating sludge-containing soln. supplied to a final treatment part by installing a dehydration means subjecting coating sludge taken out of a second separation tank by a second take-out means to dehydration treatment to separate the same into a solid component and a liquid component.

CONSTITUTION: A dehydration means has function separating the coating sludge-containing soln. taken out of a second separation tank 9 by a second take-out means into a solid component and a liquid component. The dehydration means is provided with a sludge storage tank 26 receiving the coating sludge-containing soln. from a sludge falling discharge passage 18 to store the same, a liquid supply means allowing a separated liquid to flow down from the second separation tank 9 to supply the same to the sludge storage tank 26, a take-out means taking out the coating sludge-containing soln. from the sludge storage tank 26 and a dehydrator 27 separating the taken-out coating sludge-containing soln. into a solid component and a liquid component. Since the solid component of the coating sludge from the dehydration means is supplied to a final disposal or incineration treatment part, the water content of the object to be treated supplied to the final treatment part can be lowered.



LEGAL STATUS

[Date of request for examination] 14.03.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3300140

[Date of registration] 19.04.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention establishes a washing means to contact the exhaust air in a paint booth including coating Myst, and the liquid for the Myst prehension so that coating Myst under the exhaust air may be caught by the liquid for the Myst prehension, and to discharge them to exhaust air space. The 1st separation tub for receiving the liquid from the washing means and surfacing the coating sludge in liquid, The 1st drawing means which takes out surfacing coating sludge content liquid from the 1st separation tub, The 2nd separation tub for receiving the drawing liquid from the 1st drawing means, and surfacing the coating sludge in liquid, A 1st liquid supply means to establish the 2nd drawing means which takes out a surfacing coating sludge from the 2nd separation tub, and to supply a washing means by using as said liquid for the Myst prehension the liquid separated by said 1st separation tub, It is related with the coating Myst stripper of a paint facility which has established a liquid return means to return the liquid separated by the 2nd separation tub to the 1st separation tub.

[0002]

[Description of the Prior Art] According to the coating Myst stripper of a paint facility of this kind, by preparing the 1st separation tub Coating Myst in the coating Myst supplement liquid from a washing means is sludged and removed. Since the liquid from which the coating sludge was removed is supplied to the washing means Though the coating content of the coating Myst content liquid supplied as liquid for the Myst prehension can be lessened and the cyclic use of waste water of the liquid is carried out to a washing means, there is an advantage which can ensure efficiently washing of exhaust air with a washing means, i.e., prehension of coating Myst from exhaust air.

[0003] By the former, the coating sludge content liquid which floatation was carried out by the 2nd separation tub, and was taken out with the 2nd drawing means should be sent to the final-treatment section which defangs, and carries out cancellation processing, or carries out incineration processing as a coating Myst stripper of a paint facility which has such an advantage. That is, in the former, the coating sludge content liquid which floatation was carried out and was taken out by the 2nd separation tub was made into the processing object of final treatments, such as cancellation processing and incineration processing.

[0004]

[Problem(s) to be Solved by the Invention] However, when based on the above-mentioned Prior art, in order to carry out concentration separation of coating Myst in two steps using the 1st separation tub and the 2nd separation tub, For example, when preparing one separation tub and carrying out concentration separation of coating Myst, it compares. Although water content of the coating sludge content liquid taken out from the 2nd separation tub can be made low It cannot be made to fall to the suitable water content for a final treatment. The result, It will become it is high and heavy. the coating sludge content liquid used as the processing object of a final treatment -- yet -- ** -- When it was large-scale, supply in the final-treatment section of a coating sludge was made into what cost requires and especially incineration processing was carried out, there was much consumption of the fuel for incineration and it

made the running cost of incineration processing high.

[0005] The purpose of this invention is that it is going to make very small water content of the coating sludge content liquid supplied to the final-treatment section.

[Means for Solving the Problem] The description of the coating Myst stripper of the paint facility by the 1st invention of this invention is in the point of having established the dehydration means for carrying out dehydration processing of the coating sludge taken out from the 2nd separation tub by said 2nd drawing means, and separating into a part for solid content and liquid.

[0006] The description of the coating Myst stripper of the paint facility by the 2nd invention of this invention The sludge depot with which the interior was divided into the sludge depot section which accepts the coating sludge taken out by constituting said dehydration means with the 2nd drawing means in the 1st invention of the above, and the liquid depot section is prepared. Free passage opening which makes the partes basilaris ossis occipitalis of sludge depot circles and liquid depot circles open for free passage is formed. Overflow opening which makes liquid discharge by overflow from said liquid depot circles is formed. It is in the point of establishing a liquid supply means to supply some liquid separated by the 2nd separation tub to a sludge depot, and having formed the drawing means which takes out the coating sludge content liquid of sludge depot circles, and the dehydrator which divides into a part for solid content and liquid the coating sludge content liquid taken out by that cause.

[0007]

[Function] Since according to the 1st invention it constitutes so that dehydration processing of the coating sludge content liquid separated two steps by establishing a dehydration means using the 1st separation tub and the 2nd separation tub may be carried out and it may separate into a part for solid content and liquid The processing object which supplies the solid content of the coating sludge from the dehydration means to the final-treatment section by supplying the final-treatment sections, such as cancellation and incineration, is made to the very low thing of water content.

[0008] According to the 2nd invention, supply directly the coating sludge content liquid taken out from the 2nd separation tub to a dehydrator, and it does not carry out dewater treatment as it is. While being divided into the sludge reservoir section and the liquid reservoir section which partes basilaris ossis occipitalis open for free passage through free passage opening The sludge depot which has overflow opening is prepared, and it constitutes so that the coating sludge content liquid taken out from the 2nd separation tub may be supplied to a dehydrator through the sludge depot. Supply of the coating sludge content liquid to a sludge depot, Since overflow discharge of the liquid from the sludge depot is performed, the amount of supply of the coating sludge content liquid to a sludge depot by setting up more mostly than the amount of supply of the coating sludge content liquid from a sludge depot to a dehydrator Without controlling the special amount of supply, the amount (level) of the coating sludge content liquid in a sludge depot can be stabilized, and supply of the coating sludge content liquid to a dehydrator can be stabilized the neither more nor less.

[0009]

[Effect of the Invention] Therefore, according to this invention, the coating sludge inclusion supplied to the final-treatment sections, such as cancellation and incineration, as a processing object was made as for ** to the low lightweight thing in low water content, supply to the coating sludge inclusion to the final-treatment section could be advantageously performed in respect of equipment and cost, and when especially incineration processing was carried out, coating Myst could be removed from the exhaust air in a paint booth so that the incineration processing cost could be reduced.

[0010] Expected coating sludge content liquid can be dehydrated safely, without inviting the trouble of making the feed pump to a dehydrator racing, or flooding liquid and a coating sludge especially with things [that supply of the coating sludge content liquid to a dehydrator may be stabilized without requiring complicated control] according to claim 2 carelessly from a sludge depot, if it is made like.

[0011]

[Example] A paint facility has the coating Myst stripper which removes and discharges coating Myst out of the exhaust air in the paint booth 1 for painting moving a coated object as shown in drawing 1 , and its paint booth 1 including coating Myst.

[0012] Said coating Myst stripper establishes a washing means, an exhaust air processing means, a separation means, a liquid supply means, and a dehydration means, and is constituted.

[0013] Said washing means is a means to discharge to the exhaust air space 2 in which the exhaust air in said paint booth 1 and the liquid for the Myst prehension which makes water a subject were contacted so that coating Myst under the exhaust air might be caught by the liquid for the Myst prehension, and it was installed down the paint booth 1. The scrubber 3 discharged to the exhaust air space 2 while making the liquid for the Myst prehension drop-ize (waterdrop-izing) and making exhaust air specifically contact, The liquid feeding chute 4 formed in the crosswise both ends of the paint booth 1 with the posture which met in the coated object migration direction, The liquid for the Myst prehension with which it became said scrubber 3 from the flowing-down plate 5 which carries out flowing-down guidance, and was full of it from the liquid feeding chute 4 the liquid for the Myst prehension with which it overflowed from the liquid feeding chute 4 Without adhering to the top face of the flowing-down plate 5, coating Myst which became wrap film-like, and flowed down the top face of the flowing-down plate 5, consequently has descended is constituted so that it may be caught by film-like the liquid for flowing-down Myst prehension. Therefore, the coating Myst prehension liquid which contained the exhaust air and coating Myst which were removed in coating Myst by existence of the above-mentioned washing means will be discharged by the exhaust air space 2 from the inside of the paint booth 1.

[0014] Said exhaust air processing means forms the ventilating fan 6 for discharging the processing exhaust air in said exhaust air space 2 outside, and the eliminator 7 which removes a part for the liquid under exhaust air, and is constituted.

[0015] The 1st separation tub 8 for said separation means receiving the liquid for coating Myst prehension of the coating Myst content discharged through a washing means from said paint booth 1, and carrying out floatation of the coating sludge in liquid, The 1st drawing means which takes out surfacing coating sludge content liquid from the 1st separation tub 8, The 2nd drawing means which takes out a surfacing coating sludge is established, and it consists of the 2nd separation tub 9 and its 2nd separation tub 9 for receiving the drawing liquid from the 1st drawing means, surfacing the coating sludge in liquid, and dissociating.

[0016] In the liquid supply way 10 of the flowing-down type to said 1st separation tub 8, it has the alkali-chemicals impregnation section 11 which pours the alkali chemicals for adjusting the liquid for coating Myst prehension to alkalinity into the liquid for coating Myst prehension, and the flocculant impregnation section 12 which pours flocculants, such as a macromolecule polymer for making coating Myst condense in the shape of flocks, and promoting sludging, into the liquid for coating Myst prehension.

[0017] Said 1st drawing means forms the accumulation pit 13 for making the coating sludge to which it rose to surface in the 1st separation tub 8 flow with the upper liquid, and collecting them. The surfacing coating sludge in the accumulation pit 13 by giving the revolution force to the influent to an accumulation pit by discharging liquid through the sludge drawing way 14 from the pars basilaris ossis occipitalis of the accumulation pit 13, and generating a vortex with liquid The sludge pump 16 which takes out outside the accumulation pit 13 and is supplied to the 2nd separation tub 9 through the sludge supply way 15 is formed, and it is constituted. 17 is a bulb for suspending coating sludge content liquid supply.

[0018] It is divided into tank part 9A for sludges, and tank part 9B for liquid, tank part 9A for sludges and tank part 9B for liquid are opened for free passage in the lower part so that the coating sludge in tank part 9A for sludges may not shift to tank part 9B for liquid, and said 2nd separation tub 9 has overflow type exhaust port 9a for carrying out overflow discharge of the liquid from tank part 9 for liquid B, and preventing a rise the above of an oil level.

[0019] the coating sludge to which, as for said 2nd drawing means, it rose to surface in tank part 9A for sludges among the 2nd separation tubs 9 -- the upper liquid -- ** -- it is alike and rakes out to the sludge fall exhaust passage 18 -- it rakes out, and equipment 19 is formed and it is constituted.

[0020] Said liquid supply means establishes a 1st liquid supply means to supply the liquid feeding chute 4 of said washing means by using as the liquid for coating Myst prehension the liquid separated by the

1st separation tub 8, and a liquid return means to return the liquid separated by the 2nd separation tub 9 to the 1st separation tub 8, and is constituted.

[0021] Said 1st liquid supply means forms the circulating pump 21 for liquid supply in the liquid supply way 20 to which liquid is taken out from the pars basilaris ossis occipitalis of the 1st separation tub 8, and it shows the liquid feeding chute 4, and is constituted, and the surfacing agent feed zone 22 which supplies the surfacing agent (killer agent) which surfaces coating Myst to liquid is formed in the liquid supply way 20. 23 is a bulb for suspending liquid supply.

[0022] Said liquid return means forms the bottom way 24 of the mainstream down which takes out the supernatant liquid in the 2nd separation tub 9 from a pars basilaris ossis occipitalis, and it is made to flow in the 1st separation tub 8, and the overflow flowing-down way 25 which makes the bottom way 24 of the mainstream carry out flowing-down unification of the liquid from overflow type exhaust port 9a of the 2nd separation tub 9, and is constituted.

[0023] Said dehydration means is a means to divide into a part for solid content and liquid the coating sludge content liquid taken out from the 2nd separation tub 9 by said 2nd drawing means. The sludge depot 26 which receives and stores the coating sludge content liquid from the sludge fall exhaust passage 18, The liquid supply means which carries out flowing-down supply of the supernatant liquid from the inside of said 2nd separation tub 9 at the sludge depot 26, The drawing means which takes out coating sludge content liquid, and the dehydrator 27 which divides into a part for solid content and liquid the coating sludge content liquid taken out by that cause are formed, and it consists of sludge depots 26.

[0024] Said sludge depot 26 is having the interior divided by sludge depot section 26A which receives the coating sludge content liquid from the 2nd separation tub 9, and liquid depot section 26B. And overflow opening 26F which make the bottom way 24 of said mainstream carry out flowing-down unification are formed through bottom way of outflow 26X by making liquid discharge by overflow from free passage opening 26J which make partes basilaris ossis occipitalis with the inside of sludge depot section 26A and liquid depot section 26B open for free passage, and the inside of liquid depot section 26B. Therefore, when sludge depot section 26A and liquid depot section 26B are open for free passage through free passage opening 26J at the partes basilaris ossis occipitalis Where shift into liquid depot section 26B of the surfacing coating sludge in sludge depot section 26A is prevented, the oil level in sludge depot section 26A and the oil level in liquid depot section 26B are maintained by the same level. When only liquid discharges through overflow opening 26F, while the oil level in the sludge depot 26, i.e., sludge depot section 26A, and liquid depot section 26B is maintained below at the level which is overflow opening 26F Concentration of the coating sludge in liquid is made high.

[0025] Said liquid supply means consists of branching from the bottom way 24 of the mainstream of said liquid return means, establishing the flowing-down supply way 28 which carries out flowing-down supply of the liquid in liquid depot section 26B, and forming the bulbs 29 and 30 for adjusting the splitting ratio of the liquid to them to the flowing-down supply way 28 and the bottom way 24 of the mainstream.

[0026] Said drawing means infixes the feed pump 32 for migration in the sludge content liquid supply way 31 for supplying coating sludge content liquid to a dehydrator 27, and consists of sludge depot section 26A, and the wash water supply way 33 for supplying the wash water for washing it to a dehydrator 27 to the sludge content liquid supply way 31 is connected. That is, by operating a feed pump 32, where supply of wash water is suspended, coating sludge content liquid is supplied to a dehydrator 27, and dehydration processing is carried out, and by stopping a feed pump 32 and supplying wash water to a dehydrator 27, it is constituted so that a dehydrator 27 may be washed and the dehydration engine performance may be maintained. 34 is a bulb for the supply interruption of coating sludge content liquid, and 35 is a bulb for wash water supply interruption.

[0027] Said dehydrator 27 is the thing of a centrifugal type, it has sludge exhaust port 27a which carries out fall supply of the separated solid content at the sludge container 36 of a portable mold, and effluent opening 27b which discharges a part for liquid, and the flowing-down return way 37 which returns an effluent to the 1st separation tub 8 at a flowing-down type is connected to effluent opening 27b.

[0028] Accession department 26a in which said sludge depot section 26A receives the coating sludge content liquid from the 2nd separation tub 9, By being divided into reservoir section 26b which stores a sludge, and using the partition 26c as the filtration screen which prevents passage of the thing of the magnitude beyond a setup Only the following [the magnitude which was suitable for supply to a dehydrator 27 among the coating sludges in accession department 26a] are made to shift in reservoir section 26b, and the shift to reservoir section 26b of the coating sludge and dust which became hard greatly superfluously is prevented. The agitator 38 for preventing that a coating sludge joins mutually together and serves as a big lump is installed in reservoir section 26b. That is, migration of the coating sludge content liquid by the feed pump 32 of a drawing means is made to perform, without inviting failures, such as a pump trouble.

[0029] When an example of the concrete specification of said coating Myst stripper is shown, the amount of coating Myst prehension in a washing means 0.3 kg/min, The floatation effectiveness in the 2nd separation tub 9 40% for the floatation effectiveness in the 1st separation tub 8 80%, The sludge amount of supply of 20m3 / min, and the 1st drawing means for the amount of supply of the 1st liquid supply means 1000l. / min, The liquid amount of supply to the sludge depot 26 according the amount of flowing down in the bottom way 24 of the mainstream to 980 l/min and the flowing-down supply way 28 20 l/min, Supposing it sets the amount of liquid return from a dehydrator 27 to 10 l/min and the 1st separation tub 8 as 10 l/min for the amount of supply to 10 l/min and a dehydrator 27, respectively, the amount of effluents by the overflow from the sludge depot 26 The coating Myst concentration within the 1st separation tub 8, the coating Myst concentration of the liquid supplied to a washing means from the 1st separation tub 8, The coating Myst concentration after washing, the coating Myst concentration of the liquid supplied to the 2nd separation tub 9, The coating Myst concentration of the liquid returned to the 1st separation tub 8 is set to 45 ppm, 28 ppm, 43 ppm, 375 ppm, 30000 ppm, and 76 ppm from the coating Myst concentration, the 2nd separation tub 9, and the sludge depot 26 of the liquid supplied to a dehydrator 27, respectively.

[0030] [Other Example(s)] -- although the account example of a top showed the thing of a centrifugal type as a dehydrator 27, the formats of a dehydrator 27 may be those other than a centrifugal type.

[0031] Although the above-mentioned example showed what has the sludge depot 26 as a dehydration means, from the 2nd separation tub 9, a dehydration means may supply coating sludge content liquid directly to a dehydrator 27, and may dehydrate to it.

[0032] In addition, although a sign is described in order to make contrast with a drawing convenient at the term of a claim, this invention is not limited to the configuration of an accompanying drawing by this entry.

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

CLAIMS

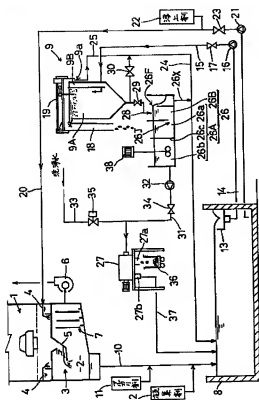
[Claim(s)]

[Claim 1] A washing means to contact the exhaust air in a paint booth (1) including coating Myst and the liquid for the Myst prehension so that coating Myst under the exhaust air may be caught by the liquid for the Myst prehension, and to discharge them to exhaust air space is established. The 1st separation tub for receiving the liquid from the washing means and surfacing the coating sludge in liquid (8), The 1st drawing means which takes out surfacing coating sludge content liquid from the 1st separation tub (8), The 2nd separation tub for receiving the drawing liquid from the 1st drawing means, and surfacing the coating sludge in liquid (9), A 1st liquid supply means to establish the 2nd drawing means which takes out a surfacing coating sludge from the 2nd separation tub (9), and to supply a washing means by using as said liquid for the Myst prehension the liquid separated by said 1st separation tub (8), In the coating Myst stripper of a paint facility which has established a liquid return means to return the liquid separated by the 2nd separation tub (9) to the 1st separation tub (8) The coating Myst stripper of a paint facility which has established the dehydration means for carrying out dehydration processing of the coating sludge taken out from the 2nd separation tub (9) by said 2nd drawing means, and separating into a part for solid content and liquid.

[Claim 2] The sludge depot (26) with which the interior was divided into the sludge depot section (26A) which accepts the coating sludge taken out by constituting said dehydration means with the 2nd drawing means, and the liquid depot section (26B) is prepared. Free passage opening (26J) which makes partes basilaris ossis occipitalis with the inside of the sludge depot section (26A) and the liquid depot section (26B) open for free passage is formed. Overflow opening (26F) which makes liquid discharge by overflow from the inside of said liquid depot section (26B) is formed. The drawing means which establishes a liquid supply means to supply some liquid separated by the 2nd separation tub (9) to a sludge depot (26), and takes out the coating sludge content liquid in the sludge depot section (26A), The coating Myst stripper of a paint facility according to claim 1 which has formed the dehydrator (27) which divides into a part for solid content and liquid the coating sludge content liquid taken out by that cause.

[Translation done.]

2



[Translation done.]